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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2002	
BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0604731F Unmanned Combat Air Vehicle (UCAV)				PROJECT 5058	
COST (\$ in Thousands)	FY 2001 Actual	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	Cost to Complete	Total Cost
5058 Unmanned Combat Air Vehicle (UCAV)	0	0	40,000	180,000	400,000	205,000	55,546	0	0
Quantity of RDT&E Articles	0	0	1	2	0	0	0	0	0

Note: UCAV is also funded under multiple AF and DARPA S&T PEs from FY99 through FY04.

(U) **A. Mission Description**

The Unmanned Combat Air Vehicle (UCAV) program will demonstrate and develop an unmanned, highly survivable and interoperable weapons system capable of effectively and affordably performing lethal and non-lethal Suppression of Enemy Air Defenses (SEAD)/Strike missions. Potential future missions for UCAV include Electronic Attack, Directed Energy, and Tactical Reconnaissance. This program will demonstrate the technical feasibility, military utility, and operational value of a UCAV system and will develop the initial and follow-on operational capabilities using an effects-based spiral development approach.

The UCAV effort consists of an ongoing System Demonstration Program (SDP) and the follow-on effects-based spiral development program. The joint DARPA/AF SDP is currently in the second of three phases. Phase II is an Advanced Technology Demonstration (ATD) that started in FY99 and is funded by multiple AF and DARPA S&T PEs. Phase III is a Risk Reduction and Operational Evaluation (RR&OE) effort beginning in FY03, which further demonstrates and matures UCAV technology, military utility, and operational value, allowing for a smooth transition from the S&T program to subsequent effects-based spiral development. The primary Phase III activity in FY03 is to take the system-level preliminary design of the next iteration X-45B demonstrator begun in Phase II and proceed into detailed design and fabrication.

(U) **FY 2001 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

(U) **FY 2002 (\$ in Thousands)**

(U) \$0 No Activity

(U) \$0 Total

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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2003 (\$ in Thousands)</u></p> <p>(U) \$37,600 Begin Phase III of the Unmanned Combat Air Vehicle (UCAV) System Demonstration Program</p> <p style="margin-left: 150px;">- Design and initial component fabrication of the X-45B air vehicle, mission control system and container</p> <p style="margin-left: 150px;">- Development/integration of X-45B advanced avionics, sensors and communications</p> <p style="margin-left: 150px;">- Requirements definition and development of advanced system software</p> <p>(U) \$2,400 Other Government Cost</p> <p style="margin-left: 150px;">- Mission Support of the SPO; travel, computer costs, misc contracts, etc.</p> <p>(U) \$40,000 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p>This program is funded under Budget Activity 04, Demonstration and Validation because it is demonstrating the technical feasibility, military utility, and operational value of a UCAV system.</p> <p>(U) <u>C. Program Change Summary (\$ in Thousands)</u></p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 55%;"></th> <th style="width: 10%; text-align: center;"><u>FY 2001</u></th> <th style="width: 10%; text-align: center;"><u>FY 2002</u></th> <th style="width: 10%; text-align: center;"><u>FY 2003</u></th> <th style="width: 15%; text-align: center;"><u>Total Cost</u></th> </tr> </thead> <tbody> <tr> <td>(U) Previous President's Budget</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">TBD</td> </tr> <tr> <td>(U) Appropriated Value</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Appropriated Value</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">a. Congressional/General Reductions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">b. Small Business Innovative Research</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">c. Omnibus or Other Above Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">d. Below Threshold Reprogram</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="margin-left: 20px;">e. Rescissions</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>(U) Adjustments to Budget Years Since FY 2002 PBR</td> <td></td> <td></td> <td style="text-align: center;">40,000</td> <td></td> </tr> <tr> <td>(U) Current Budget Submit/FY 2003 PBR</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> <td style="text-align: center;">40,000</td> <td style="text-align: center;">TBD</td> </tr> </tbody> </table> <p>(U) <u>Significant Program Changes:</u></p> <p>Phase II of the UCAV System Demonstration Program is funded in multiple AF and DARPA S&T PEs from FY99-04. Funding was added in this PE in the FY03 PBR to fund Phase III activities and initial effects-based spiral development.</p>					<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>	(U) Previous President's Budget	0	0	0	TBD	(U) Appropriated Value	0	0			(U) Adjustments to Appropriated Value					a. Congressional/General Reductions					b. Small Business Innovative Research					c. Omnibus or Other Above Threshold Reprogram					d. Below Threshold Reprogram					e. Rescissions					(U) Adjustments to Budget Years Since FY 2002 PBR			40,000		(U) Current Budget Submit/FY 2003 PBR	0	0	40,000	TBD
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BUDGET ACTIVITY 04 - Demonstration and Validation				PE NUMBER AND TITLE 0604731F Unmanned Combat Air Vehicle (UCAV)			PROJECT 5058		
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>									
	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>Cost to</u>	<u>Total Cost</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	
(U) AF S&T (PEXXXXXX)*	24,800								
(U) AF S&T (PE0603333F)		20,952	18,000						
(U) DARPA (PE0603765E)	14,000	2,000	3,000						
(U) DARPA (PE0602702E)	49,700								
(U) DARPA (PE0603285E)		60,000	60,000	30,000					
(U) Aircraft Procurement (PE0207255F)					30,000	275,000	260,000		
* Prior to FY02, multiple AF S&T PEs were used to fund the UCAV SDP. All AF S&T funding was consolidated into PE 0603333F starting in FY02.									
(U) <u>E. Acquisition Strategy</u>									
Near-term acquisition strategy is to continue the UCAV System Demonstration Program effort under the current DARPA/Air Force Other Transactions Authority (OTA) contract with Boeing Phantom Works, St. Louis, MO. DARPA will exercise the Phase III option in the current OTA to initiate Phase III activity. Long-term acquisition strategy for the follow-on effects-based acquisition program is TBD.									
(U) <u>F. Schedule Profile</u>									
		<u>FY 2001</u>				<u>FY 2002</u>		<u>FY 2003</u>	
		1	2	3	4	1	2	3	4
(U) Begin System B Long Lead Fabrication								X	
(U) System B Final Design Review									X
(U) Block 4 Software Requirements Review (1QFY04)									
(U) System B First Flight (4QFY04)									
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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2002		
BUDGET ACTIVITY				PE NUMBER AND TITLE				PROJECT		
04 - Demonstration and Validation				0604731F Unmanned Combat Air Vehicle (UCAV)				5058		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
				<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		
(U) UCAV System Demonstration Program								37,600		
(U) Other Government Cost								2,400		
(U) Total								40,000		
Note: UCAV is also funded under multiple AF and DARPA S&T PEs from FY99 through FY04.										
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>	<u>Contract</u>									
<u>Government</u>	<u>Method/Type</u>	<u>Award or</u>	<u>Performing</u>	<u>Project</u>						
<u>Performing</u>	<u>or Funding</u>	<u>Obligation</u>	<u>Activity</u>	<u>Office</u>	<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Product Development Organizations</u>										
Boeing Phantom Works, St. Louis, MO.	Section 845, Other Transactions Authority (OTA) Agreement	Mar 99	TBD	TBD				37,600	Continuing	TBD
<u>Support and Management Organizations</u>										
Various								2,400	Continuing	TBD
<u>Test and Evaluation Organizations</u>										
					<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>	<u>Total</u>
					<u>to FY 2001</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Complete</u>	<u>Program</u>
<u>Subtotals</u>										
Subtotal Product Development								37,600	TBD	TBD
Subtotal Support and Management								2,400	TBD	TBD
Subtotal Test and Evaluation										
Total Project								40,000	TBD	TBD
Project 5058										